

Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

1. (Original) A cutting accessory configured for attachment to a powered surgical handpiece, said cutting accessory comprising:

an outer hub, said outer hub having a surface geometry shaped to engage with a coupling assembly integral with the surgical handpiece so that the coupling assembly holds said outer hub to the handpiece, said outer hub having an axially extending through bore with a plurality of sections, one section of said through bore being a reservoir section having a diameter, and a housing section located forward of said reservoir section, said outer hub further formed to define an inlet bore that extends from an outer surface to said through bore and opens into said through bore between the reservoir section and the housing section;

an outer housing fixedly secured to the through bore housing section of said outer hub, said outer housing having a proximal end disposed in the through bore housing section so as to be located forward of the inlet bore;

an inner hub at least partially disposed in a proximal end of the outer hub through bore, said inner hub having a distal end that is disposed in the outer hub through bore reservoir section, said inner hub shaped to have a surface geometry that facilitates the coupling of said inner hub to a motor internal to the surgical handpiece, the inner hub having a through bore;

a rotating shaft extending forward from said inner hub through the outer hub through bore, said rotating shaft having a proximal end that is seated in the inner hub through bore; and

an expandable O-ring fitted over said rotating shaft and

located adjacent the inner hub distal end so that said O-ring is located in the outer hub through bore reservoir section, wherein said O-ring is dimensioned to have an at rest inner diameter that is greater than the outer diameter of said rotating shaft, and an expanded outer diameter that is greater than the diameter of the outer hub through bore reservoir section.

2. (Original) The cutting accessory of Claim 1, wherein said rotating shaft is formed with a closed distal end and a window proximal to the distal end, said window defined by edge surfaces that form a cutting member.

3. (Original) The cutting accessory of Claim 2, wherein said rotating shaft is further formed to define a flat surface opposite the window.

4. (Original) A method of performing surgery on a site within a dry passageway, said method including the steps of:

positioning an endoscope in the passageway, the endoscope having a distal end, wherein the distal end of the endoscope is positioned so that a surgical site in the passageway can be viewed through the distal end of the endoscope;

placing an elongated cutting accessory in the passageway, the cutting accessory having a distal end with a tissue working member and the cutting accessory defining a conduit through which fluid is discharged from the distal end of the cutting accessory;

viewing the surgical site and the cutting accessory through the endoscope;

applying the cutting accessory to the surgical site and performing a procedure with the cutting accessory;

cleaning the distal end of the endoscope by:

causing fluid to flow through the conduit so that the fluid is discharged from the distal end of the cutting accessory in a spray; and

positioning the endoscope and the cutting accessory so that the fluid spray discharged by the cutting accessory strikes the distal end of the endoscope while the distal end of the endoscope is in the passageway; and drawing a suction through the cutting accessory to remove from the passageway the fluid discharged to clean the endoscope.

5. (Original) The method of Claim 4, wherein the passageway in which the endoscope and cutting accessory are inserted is one consisting from the group of: sinus passageway; nasal passageway; and throat.

6. (Original) The method of Claim 4, wherein the cutting accessory consists of a moving shaft that is disposed inside an outer housing and:

said step of performing the procedure includes moving the shaft relative to the outer housing; and

said step of causing the fluid flow is performed by flowing fluid out through the outer housing in an interstitial space between the moving shaft and the cutting accessory.

7. (Original) The method of Claim 6, wherein:
the powered surgical handpiece includes a motor and the moving shaft is connected to the motor; and
said step of moving the shaft is performed by actuating the handpiece motor.

8. (Original) The method of Claim 4, wherein the cutting accessory consists of a tubular moving shaft that is disposed inside an outer housing and:

said step of performing the procedure includes moving the tubular shaft;

said step of causing the fluid flow is performed by flowing fluid out through the outer housing in an interstitial space between the moving shaft and the cutting accessory; and

said step of drawing a suction is performed by drawing a suction through the moving tubular shaft.

9. (Original) The method of Claim 8, wherein said step of performing the surgical procedure is performed by rotating the tubular shaft.

10. (Currently amended) A method of performing surgery in a sinus passageway, a nasal passageway or the throat, said method comprising the steps of:

positioning a cutting accessory in the sinus passageway, the nasal passageway or the throat, the cutting accessory having:

an elongated outer housing with opposed proximal and distal ends, an inlet bore in the proximal end and an outlet opening adjacent the distal end; and

an elongated tubular moving shaft within the outer shaft, the moving shaft having opposed proximal and distal ends, a tissue working member attached to the distal end and an opening adjacent the distal end;

applying the cutting accessory to a surgical site to perform the surgical procedure, wherein, in said step, the outer housing distal end and the tissue working member are directed towards tissue at the surgical site;

simultaneously with said actuation of the moving shaft, drawing a suction from the moving shaft distal end through the moving shaft so that, when the cutting accessory is applied to the surgical site, the irrigating solution is drawn through the moving shaft distal end opening;

actuating the moving shaft to perform a surgical procedure on tissue to which the cutting accessory is directed;

simultaneously with said actuation of the moving shaft, flowing an irrigating solution through the outer housing inlet bore and an interstitial space between the cutting accessory outer housing and the moving shaft to the outer housing,

wherein solution is flowed through the outer housing at a rate of at least 25 ml/min;

and providing a seal between the outer housing and the moving shaft, the seal being located between the outer housing inlet bore and distal end of the moving shaft so that the seal blocks at least 90% of the fluid introduced into the interstitial space between the outer housing and the moving shaft from flowing to the distal end of the moving shaft;

wherein the rate at which irrigating solution is flowed into the outer housing inlet bore and the rate at which said suction is drawn are set so at least 6% of the solution flowed into the outer housing inlet bore is discharged from the outer housing outlet opening to the surgical site.

11. (Original) The method of Claim 10, wherein, in said step of actuating the moving shaft, the moving shaft is rotated relative to the outer housing.

12. (Original) The method of Claim 10, wherein:
the cutting accessory is attached to handpiece, the handpiece having a suction passageway that is in fluid communication with the proximal end of the moving shaft;
said step of drawing a suction through the moving shaft is performed by drawing a suction through the suction passageway in the handpiece.

13. (Original) The method of Claim 12, further including the steps of:

introducing a supplemental compound into the irrigating solution prior to said step of flowing the irrigating solution through the outer housing inlet bore of the cutting accessory; and

applying the discharge from the cutting accessory window to tissue so that a mixture of irrigating solution and the supplemental compound is applied to the tissue.

14. (Original) The method of Claim 10, wherein the rate at which irrigating solution is flowed into the outer housing inlet bore and the rate at which said suction is drawn are set so at least 10% of the solution flowed into the outer housing inlet bore is discharged from the outer housing outlet opening onto the surgical site

15. (Original) The method of Claim 10, wherein the rate at which irrigating solution is flowed into the outer housing inlet bore and the rate at which said suction is drawn are set so irrigating solution flowed into the outer housing inlet bore is discharged from the outer housing outlet opening onto the surgical site at a rate of at least 2 ml/min.

16. (Original) The method of Claim 10, wherein:
the outer housing is formed to have a closed distal end and the outlet opening is proximal to the distal end of the outer housing;

in said step of actuating the moving shaft, the moving shaft is rotated and the moving shaft is formed to have an outer surface that defines at least one flat that is positioned to selectively come into registration with the outer housing outlet opening in said step of actuating the moving shaft; and

in said step of flowing an irrigating solution through the outer housing, irrigating solution is flowed over the flat of said moving shaft so that, when the flat comes into registration with the outlet opening of the outer housing, irrigating solution is pulse discharged through the opening.

17. (Original) The method of Claim 16, wherein in said step of discharging irrigation solution through the outer housing outlet opening, irrigating solution is discharged proximally away from the distal end of the outer housing.

18. (Original) The method of Claim 10, wherein a

maximum of 20% of the irrigating solution flowed into the outer housing inlet bore is discharged from the outer housing outlet opening to the surgical site.

19. (Currently amended) A method of performing surgery in a sinus passageway, a nasal passageway or the throat, said method comprising the steps of:

positioning a cutting accessory in the sinus passageway, the nasal passageway or the throat, the cutting accessory having:

an elongated outer housing with opposed proximal and distal ends, an inlet bore in the proximal end and an outlet opening in the distal end; and

an elongated tubular moving shaft within the outer shaft, the moving shaft having opposed proximal and distal ends, a tissue working member attached to the distal end and an opening adjacent the distal end;

applying the cutting accessory to a surgical site to perform the surgical procedure, wherein, in said step, the outer housing distal end and the tissue working member are directed towards tissue at the surgical site;

actuating the moving shaft to perform a surgical procedure on tissue to which the cutting accessory is directed;

creating a mixture of a topical medicine and irrigating solution;

simultaneously with said actuation of the moving shaft, flowing the mixture through the outer housing inlet bore and an interstitial space between the cutting accessory outer housing and the moving shaft to the outer housing;

discharging the mixture from the outer housing distal end opening so that simultaneously with said actuation of the cutting accessory mixture is discharged onto the tissue at which the surgical procedure is being performed by the cutting accessory; and

simultaneously with said actuation of the moving shaft,

drawing a suction through the moving shaft so that, when the cutting accessory is applied to the surgical site, fluid is drawn through the moving shaft distal end opening.

20. (Currently amended) The method of Claim 19, wherein said steps of creating the topical medicine-and-irrigating solution mixture and flowing the mixture through the outer housing inlet bore are performed by:

pumping the irrigating solution from a supply source into the outer housing inlet bore; and

introducing into the irrigating solution pumped from the supply source the topic medicine to create the mixture after said step of pumping the irrigating solution from the supply source.

21. (New) The method of Claim 4, wherein said steps of cleaning the distal end of the endoscope and drawing a suction through the cutting accessory are performed simultaneously.